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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,188	06/01/2001	David C. Mullen	7	2918

34847 7590 12/21/2004

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EXAMINER

ALI, SYED J

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/872,188	Applicant(s) MULLEN, DAVID C.	
	Examiner Syed J Ali	Art Unit 2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-22 are pending in this application.

Claim Objections

2. **Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form.**

3. Claim 3 indicates that “combining” probabilities to obtain a number is performed by “summing” the probabilities. “Summing” numbers does not narrow the limitation relating to “combining” the numbers. They are interpreted to perform the exact same function in the same manner.

4. **Claims 19-20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can only refer to one set of claims. See MPEP § 608.01(n).**

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. **Claims 4, 6, 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

7. The following terms lack antecedent basis:

a. In lines 5 and 7 of claim 4 and lines 4-5 of claim 6, *h* is undefined. The meaning of the term is subsequently defined, but the definition is unclear. The meaning of the term should be clearly defined and moved ahead of any other references to it.

8. As per claims 19-20, it is unclear whether the claims are independent or dependent claims. As is, apparatus or computer-readable medium claims should not depend from method claims. Additionally, the multiple dependencies refer to separate claim groupings, so it is unclear what claims they are meant to depend from.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. **Claims 19 and 21-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

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11. As per claims 19 and 21-22, the apparatus are software per se, as it is not tangibly embodied, failing to recite any hardware as part of the apparatus.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. **Claims 1-13, 15-16, and 18-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kalavade et al. (USPN 6,393,433) (hereinafter Kalavade).**

14. As per claims 1-10, 16, and 18-22, Kalavade teaches the invention as claimed, including a work-management method in a call center comprising determining a probability of availability at a future point in time of each of a plurality of resources (col. 2 lines 1-20; col. 8 line 57 - col. 9 line 11; col. 10 lines 53-62) by determining an amount of time t that the resource has been servicing a task by now (col. 6 lines 15-31; col. 7 lines 19-37), wherein the tasks comprise calls (col. 3 lines 32-62);

for each of the resources, determining a probability $F(t + h)$ of the resource servicing its task to completion within a total amount of time $t + h$ (col. 9 lines 60-67);

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for each of the resources, determining a probability $F(t)$ of the resource completing servicing its task by now (col. 10 lines 1-20);

for each of the resources, determining a probability P that the resource will complete servicing its task at the future point in time an amount of time h from now as $F(t + h) - F(t) / 1 - F(t)$ (col. 9 line 33 - col. 10 line 24);

combining the probabilities by summing the probabilities to obtain a number (col. 4 lines 40-47); and

using the number to schedule no more than the number of new tasks to become available for servicing by the plurality of the resources (col. 9 lines 5-11) for the resources for the future point in time (col. 4 lines 40-47; col. 4 line 65 - col. 5 line 1) by determining whether or not to initiate or cancel an outbound call in response to P (col. 3 lines 56-62; col. 10 line 53 - col. 11 line 12).

15. As per claims 11-13 and 15, Kalavade teaches the invention as claimed, including obtaining historical task-completion statistics comprising a mean and a variance of time historically spent by resources on servicing tasks to completion (col. 4 lines 20-31); and

from the obtained statistics determining the probability $F(t + h)$ and $F(t)$ (col. 7 lines 19-37; col. 9 line 33 - col. 10 line 24) by fitting the task-completion statistics into a lifetime closed-form cumulative-probability distribution to determine the parameters of the distribution (col. 5 line 36-65), and

evaluating the distribution with the determined parameters and the total amount of time $t + h$ to obtain $F(t + h)$ and the amount of time t to obtain $F(t)$ (col. 7 lines 19-53), wherein

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determining the amount of time t and the historical task-completion statistics is for one of a plurality of types of tasks (col. 4 lines 14-39).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. **Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalavade in view of Pena-Nieves et al. (USPN 6,816,798) (hereinafter Pena-Nieves).**

18. As per claims 14 and 17, Pena-Nieves teaches the invention as claimed, including representing the historical task-completion statistics as a Weibull distribution (col. 5 lines 24-26) using dispersion and central tendency parameters (col. 5 lines 27-43) in the form of a histogram (col. 4 lines 22-33).

19. It would have been obvious to one of ordinary skill in the art to combine Kalavade and Pena-Nieves since Weibull distributions have a great deal of flexibility for determining probabilities and can assume various distribution profiles (Pena-Nieves, col. 5 line 24-26). Many functions and applications are developed for mathematical analysis using Weibull distributions, making it a logical choice for statistical analysis and applications.

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Conclusion


20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Syed Ali
December 2, 2004



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